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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/759,362	01/16/2001	Toshiaki Aoai	Q62650	1920

7590 08/30/2002

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EXAMINER

CHU, JOHN S Y

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 08/30/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/759,362

Applicant(s)

AOAI ET AL.

Examiner

John S. Chu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

This Office action is in response to the application filed January 16, 2001.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 9-17 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by TZOU.

The claimed invention is drawn to a negative-working resist composition for electron beams or X-rays comprising:

(A) a compound generating an acid and/or radical species by the irradiation of electron beams or X-rays,

(B') a resin having at least one unsaturated bond polymerizable by an acid and/or an alkali, which is insoluble in water but soluble in an alkali aqueous solution, and

(C) a crosslinking agent causing crosslinking with the resin (B') by the action of an acid.

TZOU discloses a photopolymerizable resinous composition comprising photocurable prepolymer (general formula [I]), a photocurable monomer of general formula [II], a photocurable monomer containing at least one vinyl group, a photopolymerization initiator, a curing agent and solvents, see column 3, lines 1-60. Each of the claimed ingredients as recited in claim 9 is met by the disclosure of TZOU.

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Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8 rejected under 35 U.S.C. 103(a) as being unpatentable over SAKURAI et al.

The claimed invention is drawn to a negative-working resist composition for electron beams or X-rays comprising (A) a compound generating an acid and/or radical species by the irradiation of electron beams or X-rays, (B) a resin which is insoluble in water and soluble in an alkali aqueous solution, (C) a crosslinking agent causing crosslinking with the resin of component (b) by the action of an acid, and (D) a compound having at least one unsaturated bond capable of being polymerized by acid and/or a radical.

SAKURAI et al discloses a radiation sensitive composition comprising a colorant, an alkali-soluble resin, (C) a polyfunctional monomer and (C) a copolymer of a monomer of formula (I), see column 4, line 31 – column 6, line 32 for the alkali-soluble resin, column 6, line 42 – column 7, line 52 for the polyfunctional monomer, and column 7, 53 – column 10, line 43 for the photoinitiator and column 14, line 53-54 for the crosslinking agent, such as an epoxy or melamine.

The reference discloses each of the claimed ingredients as recited in claim 1, except it lacks the presence of a crosslinking agent in a working example.

It would have been *prima facie* obvious to one of ordinary skill in the art of photosensitive compositions to use an epoxy compound or a melamine compound in the

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composition of SAKURAI et al as a crosslinking agent as taught in column 14, line 53-54 with the reasonable expectation of same or similar results as disclosed in SAKURAI et al for excellent developability and adhesion as disclosed.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. MIYABE et al '397 and '653 disclose electron beam-curable resist compositions comprising an alkali-soluble resin, a photoacid generating compound and a crosslinking agent.

The references lack an unsaturated monomer.

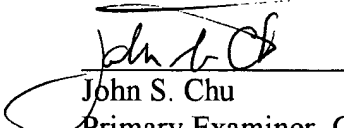
SAKURAI et al discloses a radiation sensitive composition for color filters

ICHIKAWA et al discloses a photosensitive resin composition comprising a resin having acid decomposable groups, an ethylenically unsaturated compound, a photo acid generator. No crosslinking agent is disclosed.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (703) 308-2298. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

The fax phone number for this Group is (703) 305-5433.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.


John S. Chu
Primary Examiner, Group 1700

J.Chu
August 26, 2002